

## WHAT IS CLAIMED IS:

1           1. A method of data processing comprising:  
2           connecting a plurality of data processing nodes in a  
3 peer-to-peer relationship, thereby enabling each data  
4 processing node to receive data packets from adjacent input  
5 connected nodes and to transmit data packets to adjacent  
6 output connected nodes;  
7           at each data processing node examining data packets  
8 received for adjacent input connected nodes and selectively  
9 routing the data packet to the current data processing node,  
10 routing to an adjacent output connected node or both, whereby  
11 any data processing node can transmit a data packet to any  
12 destination data processing node for forwarding by other data  
13 processing nodes to the destination data processing node;  
14           at each data processing node responding to a receipt  
15 confirmation data packet received from a source data  
16 processing node by transmitting an acknowledge data packet to  
17 the source data processing node; and  
18           at least one supervisory data processing node  
19 periodically transmitting a receipt acknowledge data packet to  
20 each other data processing node and determining a data  
21 processing node has failed upon failure to receive an  
22 acknowledge data packet from the data processing node in  
23 response to a receipt confirmation data packet.

1           2. The method of data processing of claim 1, further  
2 comprising the steps of:

3 storing health data at each data processing node  
4 concerning the current health operating status of the data  
5 processing node; and

6 wherein said step of responding to a receipt confirmation  
7 data packet includes transmitting an acknowledge data packet  
8 including the health data.

1 3. The method of data processing of claim 1, further  
2 comprising the steps of:

3 at each data processing node resetting an internal data  
4 processor in response to receipt of a reset data packet; and  
5 sending a reset data packet from a supervisory data  
6 processing node to a data processing node determined to have  
7 failed.

1 4. The method of data processing of claim 1, further  
2 comprising:

3 at each data processing node storing a unique node ID;  
4 at each data processing node storing an indication of  
5 node IDs corresponding to each adjacent output connected node;  
6 said step of selectively routing the data packet includes  
7 routing the data packet to the current data  
8 processing node if a header of the data packet includes  
9 the node ID of the data processing node,

10 routing the data packet to an adjacent output  
11 connected node if the header of the data packet includes  
12 a node ID matching the corresponding stored indication of  
13 node IDs for the adjacent output connected node, and

14 not routing the data packet to the current data  
15 processing node or to any adjacent output connected node

16       if the header of the data packet includes a node ID not  
17       matching the node ID of the data processing node or the  
18       stored indication of node IDs for any adjacent output  
19       connected node.

1       5. The method of data processing of claim 1, further  
2       comprising:

3       altering the stored indication of node IDs corresponding  
4       to each adjacent output connected node in data processing  
5       nodes adjacent to a failed node to route data packets around  
6       the failed node.

1       6. The method of data processing of claim 1, wherein  
2       each data processing node includes a CPU core and a bridge  
3       circuit connected to the CPU core, the adjacent input  
4       connected nodes and the adjacent output connected nodes, said  
5       method further comprising the steps of:

6       at each data processing node employing a program running  
7       on the CPU core to periodically reset a timer in the bridge  
8       circuit; and

9       at each data processing node using the bridge circuit to  
10      not route any data packet to the current data processing node  
11      or to any adjacent output connected node upon expiration of a  
12      time of the timer, whereby a data processing node having a  
13      failed CPU core absorbs all received data packets.